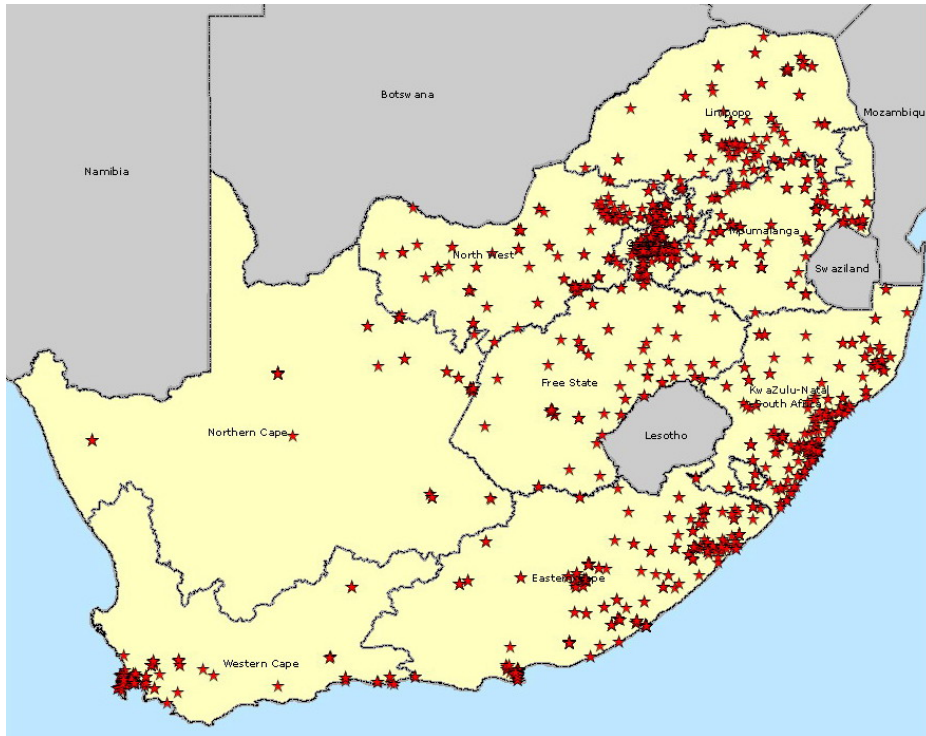


South Africa SHARING Website

Data Warehouse Site Mapping Component



Presented by
Khulisa Management Services
July 2006

How Do We Map Sites?

- **Linking a Site to an Existing Feature**
 - Every site needs to be referenced to its physical location
 - Can be linked to a physical address or town/city/village
 - This places a site in the general area of the address
 - Sites are attached to a health facility or place name using the site's name or location as a common feature
 - Sites will inherit the location of this feature
 - In this way, a site is linked to a health facility or place, and can be located using the co-ordinate of that existing feature.

How Do We Map Sites?

■ Applying Co-ordinates to Site

- Sites in the Data Warehouse are physically placed according to 3 different precisions:
 - Co-ordinate of existing Health Facility
 - Co-ordinate of existing Place (town/city/settlement)
 - Co-ordinate of actual Site (captured with GPS device)
- Co-ordinate of actual site is the most accurate placement, as it will reference the site to within 1 metre (depending on GPS accuracy).

How Do We Map Sites?

■ Plotting Sites in a GIS

- Co-ordinate provides physical location for site
- Using X and Y co-ordinates, site are plotted in physical space
- By creating a Geographic Information System (GIS), sites and their associated data can be used to map site information according to a user's needs.
- Sites that are mapped can also be used along with other layers (schools, roads, etc), and be displayed according to their relationships with these other layers.

How Site Data Is Stored

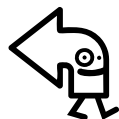
Site Information

SiteID	PrimeName	SubName	SiteName	RefLocation	RefProv	ProgramAreaID	ProgramAreaName	XDec	YDec
64	Starfish	Heartbeat (HB)	Bakenberg	Potgietersrus	LP	5	OVC	29.01064	-24.17628
65	University Research Corporation: TB TA	Eastern Cape Provincial Department of Health	Bala	Bala	EC	9	TB/HIV		
66	University Research Corporation: TB TA	KwaZulu-Natal Provincial Department of Health	Ballito Clinic	Ballito	KZ	9	TB/HIV	31.20502	-29.52911
67	University Research Corporation: TB TA	Project Support Association - South Africa	Bambanane	White River	MP	1	Counseling and Testing	31.0139	-25.32671
68	Family Health International: CTR	Project Support Association - South Africa	Bambanani HBC	Zaaiplaats	MP	1	Counseling and Testing	29.60861111	-25.80777778
69	US Department of State: Small Grants for HIV/AIDS	Project Support Association - South Africa	Bambanani HBC	Zaaiplaats	MP	10	Treatment	29.60861111	-25.80777778
70	US Department of State: Small Grants for HIV/AIDS	South African Council of Churches	Bambanani HBC	Zaaiplaats	MP	2	HIV Care and Support	29.60861111	-25.80777778
71	US Department of State: Small Grants for HIV/AIDS		Bambisanani Project	Bizana	EC	2	HIV Care and Support	29.85416667	-30.85722222
72	US Department of State: Small Grants for HIV/AIDS		Bambisanani Project	Flagstaff	EC	2	HIV Care and Support	29.49767	-31.07432
73	US Department of State: Small Grants for HIV/AIDS		Bambisanani Project	Lusikisiki	EC	2	HIV Care and Support	29.60372	-31.36594
74	US Department of State: Small Grants for HIV/AIDS		Bambisanani Project	Tabankulu	EC	2	HIV Care and Support	29.29972222	-30.9575
75	University Research Corporation: TB TA	Eastern Cape Provincial Department of Health	Bambisanani Project	Umzimkhulu	KZ	2	HIV Care and Support	29.89134	-30.28115
76	John Snow, Inc.	Limpopo Provincial Department of Health	Bambisana PHC	Lusikisiki	EC	9	TB/HIV	29.60372	-31.36594
77	Academy for Educational Development: CTR		Ba-Phalaborwa HIV/AIDS	Namagale	LP	3	HIV Prevention	31.03471	-23.93506
78	Nurturing Orphans of AIDS for Humanity: CTR		Baphumile Clinic	Umzumbi	KZ	6	PMTCT	30.35283	-30.55167
79	Johns Hopkins University: Health Comm Mindset		Bapsfontein	Kempton Park	GP	5	OVC	28.21524	-26.01183
80	Johns Hopkins University: Health Comm Mindset		Bapsfontein Clinic	Kempton Park	GP	1	Counseling and Testing	28.21524	-26.01183
81	Johns Hopkins University: Health Comm Mindset		Bapsfontein Clinic	Kempton Park	GP	3	HIV Prevention	28.21524	-26.01183
82	Johns Hopkins University: Health Comm Mindset		Bapsfontein Clinic	Kempton Park	GP	10	Treatment	28.21524	-26.01183
83	US Department of State: Small Grants for HIV/AIDS		Baptist Children's Center	Potchefstroom	NW	5	OVC	27.05316	-26.70173
84	Salvation Army World Service		Barberton Corps	Barberton	MP	2	HIV Care and Support	31.04917	-25.77691
85	Salvation Army World Service		Barberton Corps	Barberton	MP	3	HIV Prevention	31.04917	-25.77691
86	Salvation Army World Service		Barberton Corps	Barberton	MP	5	OVC	31.04917	-25.77691
87	Johns Hopkins University: Health Comm Mindset	Applied Broadcast Centre (ABC) Ulwa	Barberton CR	Barberton	MP	3	HIV Prevention	31.04917	-25.77691
88	John Snow, Inc.	Mpumalanga Provincial Department of Health	Barberton Hospital	Barberton	MP	3	HIV Prevention	31.04189	-25.78144
89	Management Sciences for Health: HPM		Barberton Hospital	Barberton	MP	10	Treatment	31.04189	-25.78144
90	Medical Research Council: CHIP		Barberton Hospital	Barberton	MP	8	Strategic Information	31.04189	-25.78144
91	Salvation Army World Service		Barkerville Corps	Barkerville	EC	2	HIV Care and Support	28.94861111	-31.01722222
92	Salvation Army World Service		Barkerville Corps	Barkerville	EC	3	HIV Prevention	28.94861111	-31.01722222
93	Salvation Army World Service		Barkerville Corps	Barkerville	EC	5	OVC	28.94861111	-31.01722222
94	Reproductive Health & HIV Research Unit		Bayview	Bayview	KZ	2	HIV Care and Support	30.91527	-29.92492
95	Reproductive Health & HIV Research Unit		Bayview	Bayview	KZ	9	TB/HIV	30.91527	-29.92492
96	Reproductive Health & HIV Research Unit		Bayview Sat	Bayview	KZ	2	HIV Care and Support	30.91527	-29.92492
97	Reproductive Health & HIV Research Unit		Bayview Sat	Bayview	KZ	9	TB/HIV	30.91527	-29.92492
98	National Department of Health / Eastern Cape		Baziya Health center	Baziya	EC	2	HIV Care and Support	28.43305556	-31.61416667
99	National Department of Health / Eastern Cape		Baziya Health center	Baziya	EC	4	Laboratory Services	28.43305556	-31.61416667
100	National Department of Health / Eastern Cape		Baziya Health center	Baziya	EC	6	PMTCT	28.43305556	-31.61416667
101	National Department of Health / Eastern Cape		Baziya Health center	Baziya	EC	8	Strategic Information	28.43305556	-31.61416667
102	National Department of Health / Eastern Cape		Baziya Health center	Baziya	EC	9	TB/HIV	28.43305556	-31.61416667
103	National Department of Health / Eastern Cape		Baziya Health center	Baziya	EC	10	Treatment	28.43305556	-31.61416667
104	Reproductive Health & HIV Research Unit		Beatrice Str	Beatrice Str, Durk	KZ	2	HIV Care and Support		
105	Reproductive Health & HIV Research Unit		Beatrice Str	Beatrice Str, Durk	KZ	9	TB/HIV		
106	Johns Hopkins University: Health Comm Mindset		Beaufort West Clinic	Beaufort West	WC	1	Counseling and Testing	22.57988	-32.30712
107	Johns Hopkins University: Health Comm Mindset		Beaufort West Clinic	Beaufort West	WC	3	HIV Prevention		
108	Johns Hopkins University: Health Comm Mindset		Beaufort West Clinic	Beaufort West	WC	10	Treatment		
109	Johns Hopkins University: Health Comm Mindset		Bekkersdal West Clinic	Bekkersdal	GP	1	Counseling and Testing		
110	Johns Hopkins University: Health Comm Mindset		Bekkersdal West Clinic	Bekkersdal	GP	3	HIV Prevention		
111	Johns Hopkins University: Health Comm Mindset		Bekkersdal West Clinic	Bekkersdal	GP	10	Treatment	27.69733	-26.28278
112	John Snow, Inc.	Catholic Relief Services	Bela Bela	Bela Bela	LP	10	Treatment	28.31617	-24.88093
113	University Research Corporation: TB TA	Limpopo Provincial Department of Health	Bela-Bela Clinic	Belabela	LP	9	TB/HIV	28.29551	-24.88281
114	Medical Research Council: CHIP		Bela Bela Hospital	Bela Bela	LP	8	Strategic Information	28.31617	-24.88093
115	University Research Corporation: TB TA	Limpopo Provincial Department of Health	Bela-Bela Town Clinic	Belabela	LP	9	TB/HIV		

Co-ordinates

How Site Data Is Stored

	Name	Province	XDec	YDec
▶	7 Esselen Street Clinic	GP	28.045	-26.1909
	4TH Avenue Clinic	GP	27.9056	-26.2662
	80 Albert Street Clinic	GP	28.0498	-26.2072
	8 SAI (SANDF) Clinic	NC	21.25858	-28.43767
	Aandrus Clinic	FS	26.65999	-27.77903
	Aan-het-Pad Clinic	WC	18.855	-33.91111
	Abaqulusi School Health Service	KZ		
	Abbotsdale Satellite Clinic	WC	18.67611	-33.49
	Abbotspoort Clinic	LP	28.08689	-23.45022
	Abbotspoort Mobile	LP	28.08618	-23.45065
	Aberdeen Hospital	EC	24.06093	-32.48621
	Aberdeen Mobile	EC	24.05321	-32.47671
	Aberdeen Satellite Clinic	EC	24.06438	-32.47816
	Acaciavale Clinic	KZ	29.77196	-28.56512
	Ackeer Street Mobile	EC	25.49539	-33.87327
	Ackerville Municipal Clinic	MP	29.17433	-25.86603
	Addington Hospital	KZ	31.04179	-29.86186
	Addo Clinic	EC	25.54403	-33.39547
	Addo Enon Satellite Clinic	EC	25.68981	-33.54608
	Addo Mobile 1	EC	25.54403	-33.39547
	Addo Mobile 2	EC	25.54403	-33.39547
	Adelaide Clinic	EC	26.17441	-32.42306
	Adelaide Gateway Clinic	EC	26.29404	-32.69994
	Adelaide Hospital	EC	26.29427	-32.70092
	Adelaide Mobile	EC	26.2963	-32.70812
	Adelaide Tambo Clinic	GP	28.2334	-25.5741
	AD Keet Clinic	EC	24.91831	-34.06025
	Adriaanse Clinic	WC	18.58464	-33.93802
	AE Haviland Memorial Clinic	KZ	30.0449	-28.8599
	Aeroville Clinic	EC	25.6035	-32.74962
	Afsondering Clinic	EC	28.94812	-30.17988
	Agatha Mobile	LP	30.16309	-23.83519
	Aggeneys Clinic	NC	18.83579	-29.23375
	Agincourt CHC	LP	31.26075	-24.81243
	Agisanang Clinic	NW	25.82387	-26.5583
	Agnes Rest Clinic	EC	27.0484	-31.69072
	Agriqwa Farms Mobile	FS	27.8435	-28.02479
	Alabama 1 Clinic	NW	26.57945	-26.86403
	Alabama 2 Clinic	NW	26.57945	-26.86403



**Health Facility
Co-ordinates**

**Place Name
Co-ordinates**



	Name	Province	XDec	YDec
▶	Aankoms	MP	30.86824	-26.16315
	Aapieshoek	KZ	31.36053	-27.41589
	Abakwa Cele	KZ	31.09512	-29.03254
	Abashumi	KZ	31.38855	-29.02397
	Abbotsdale	WC	18.6748	-33.48425
	Abbotsford	EC	27.91903	-32.96094
	Abbotspoort/Dikgopeng	LP	28.08928	-23.44962
	Abebhuzi	KZ	30.62496	-29.61649
	Abejuti	KZ	30.95186	-29.44327
	Aberdeen	EC	24.04974	-32.47647
	Aberdeen (Rural)	EC	23.8396	-32.62097
	Abetshawe AA	EC	29.89665	-30.87069
	Ackerville Informal	MP	29.18721	-25.86637
	Acornhoek	LP	31.07246	-24.60971
	Acton Homes	KZ	29.41208	-28.63842
	Actonville	GP	28.30655	-26.21374
	Adamayview	NW	26.68968	-26.84943
	Adams College	KZ	30.81602	-30.03096
	Adams Mission	KZ	30.80067	-30.03502
	Addney	LP	28.94365	-23.22022
	Addo	EC	25.69042	-33.54657
	Adelaide	EC	26.31356	-32.68893
	Adelaide (Rural)	EC	26.37037	-32.6635
	Adriaanse	WC	18.58914	-33.93961
	Aerorand	MP	29.44722	-25.79278
	Aeroton	GP	27.97786	-26.25654
	Aeroville	EC	25.60278	-32.74778
	Africa Top	KZ	30.05079	-30.29482
	Afrika	KZ	30.94758	-29.7024
	Aftoni	LP	30.15736	-22.76168
	Agavia	GP	27.74721	-26.09008
	Aggeneys	NC	18.84237	-29.24446
	Agincourt	LP	31.22606	-24.82327
	Agisanang	NW	25.82451	-26.55955
	Airdlin	GP	28.06381	-26.0295
	Air Force Base	FS	26.22866	-29.12122
	Airport	KZ	30.94563	-29.96399
	AK	KZ	31.02148	-29.84083
	Akasia	GP	28.18814	-26.67306

Site GPS Co-ordinates

The Format of GPS Co-ordinates

- A manually captured GPS co-ordinate provides the most accurate means of placing a site
- Can be captured in either of the following formats:
 - Degrees, Minutes, Seconds
 - Eg. 26° 25' 19" S 31° 30' 58" E
 - Decimal Degrees
 - Eg. -26.422, 31.516
- Either format can be captured for sites in the Data Warehouse, but most GPS units will output co-ordinates in the first format.

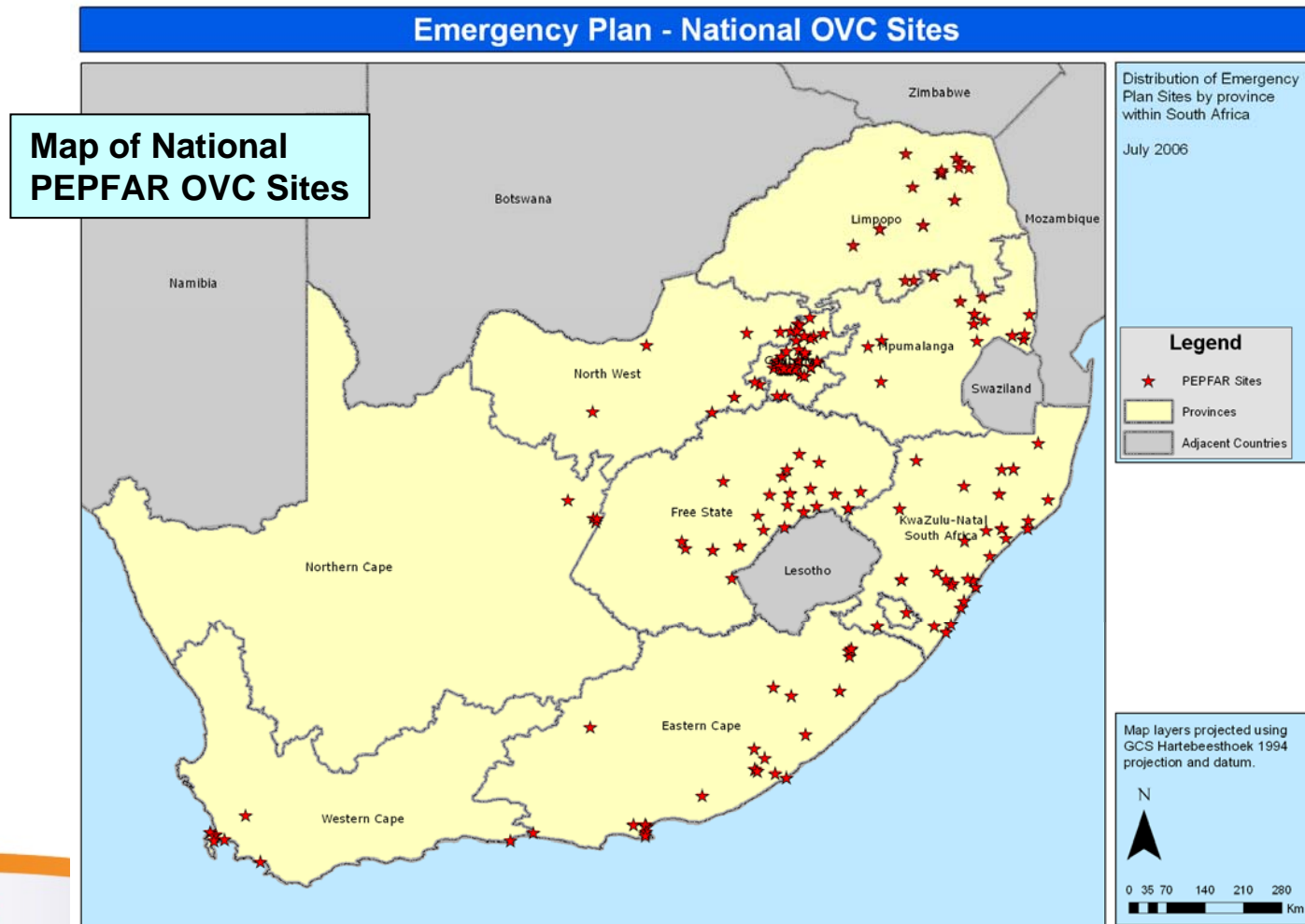
Using Site Data In a GIS

- **What Can We Do With Mapped Sites?**

Emergency Plan - National Sites



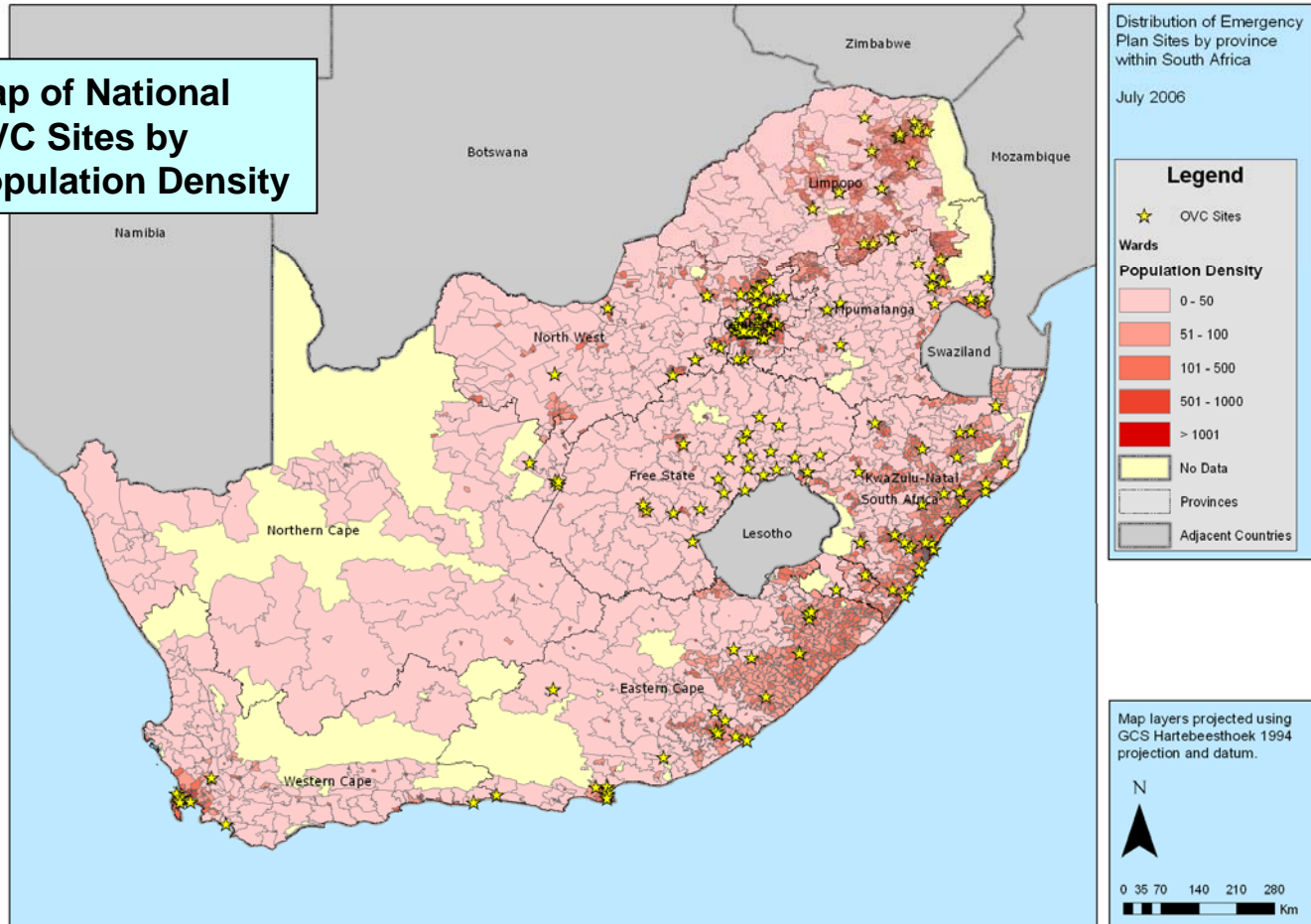
Using Site Data In a GIS



Using Site Data In a GIS

Emergency Plan Sites - OVC Sites by Population Density

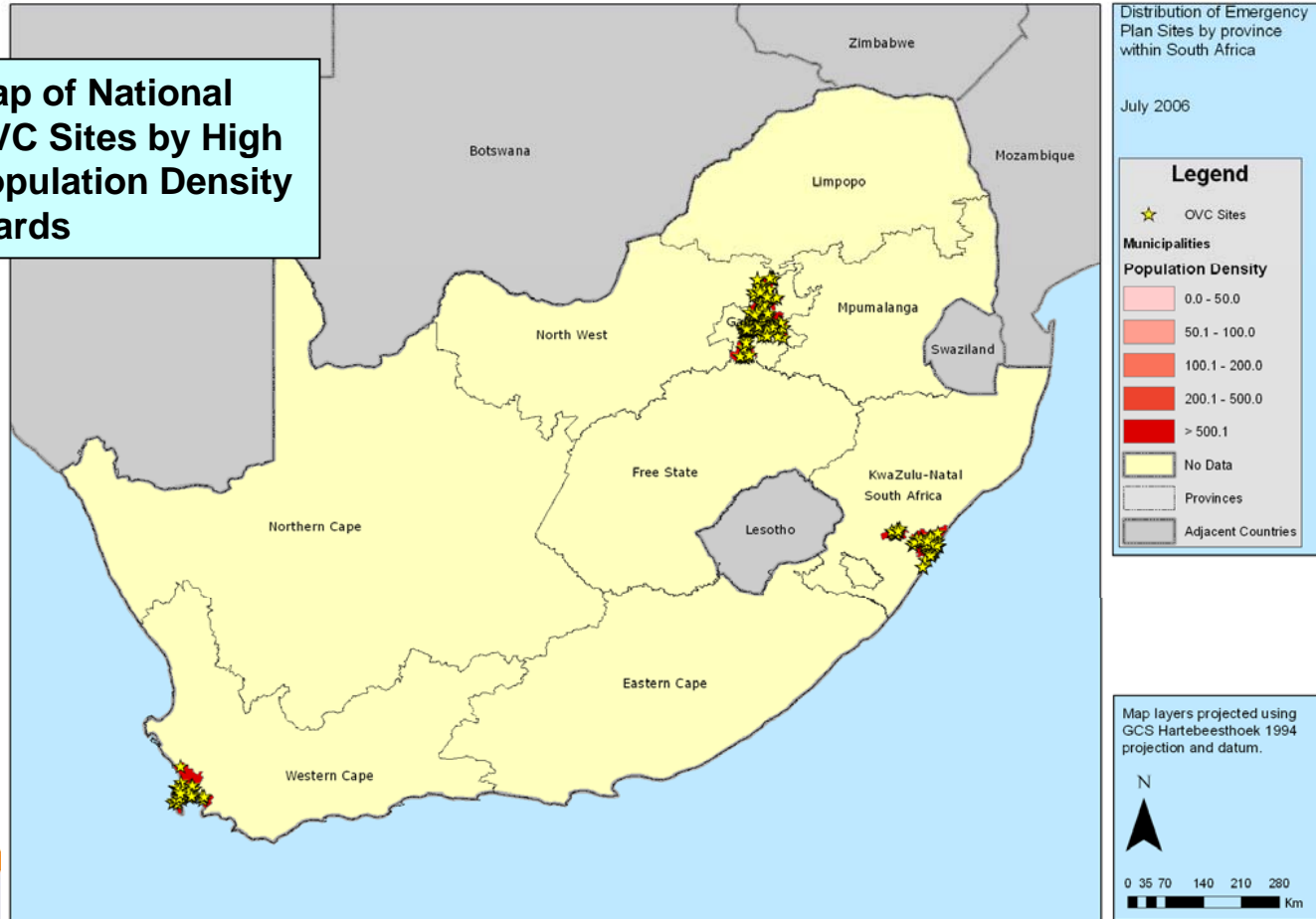
Map of National
OVC Sites by
Population Density



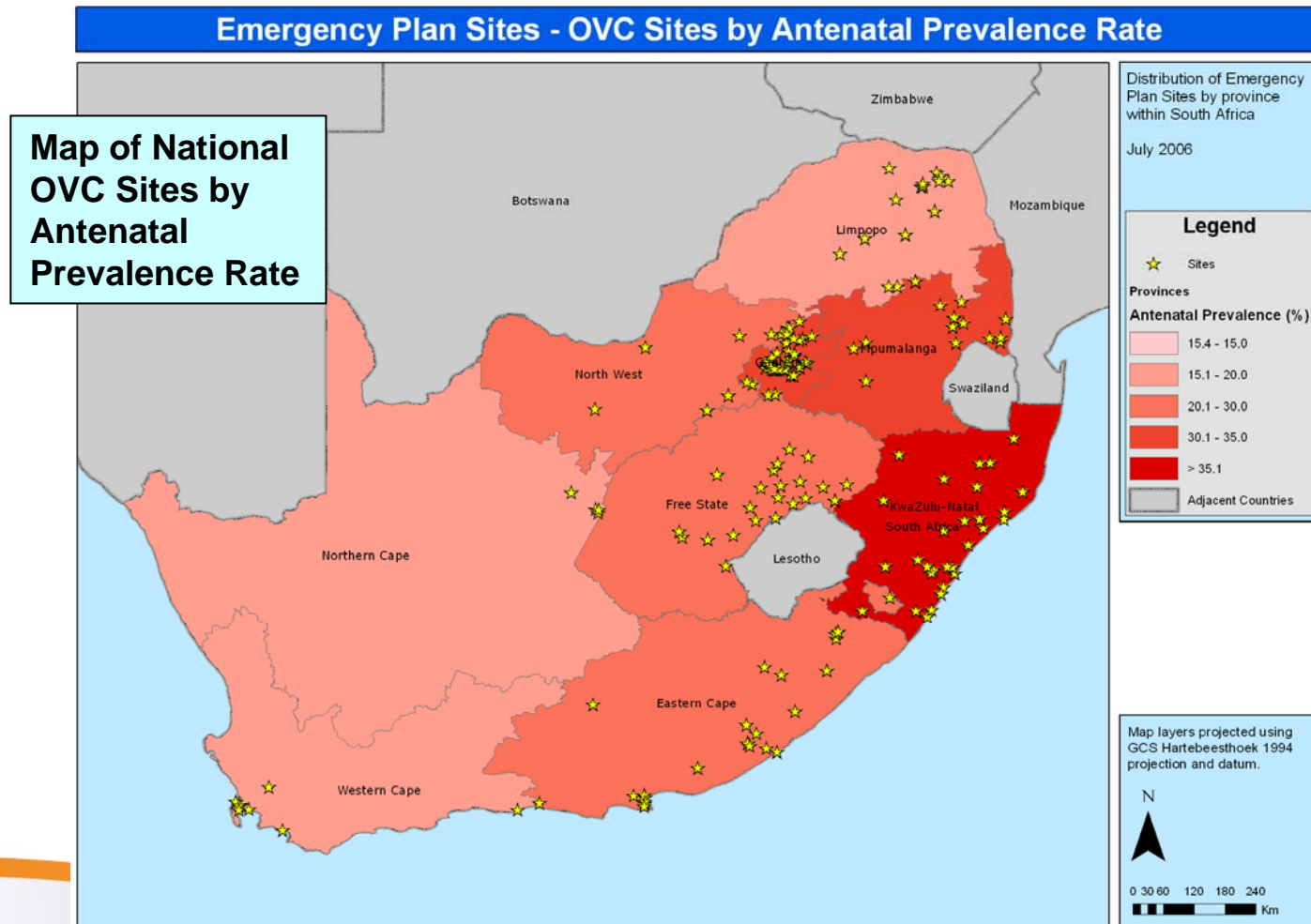
Using Site Data In a GIS

Emergency Plan Sites - OVC Sites in High Population Density Wards

Map of National
OVC Sites by High
Population Density
Wards



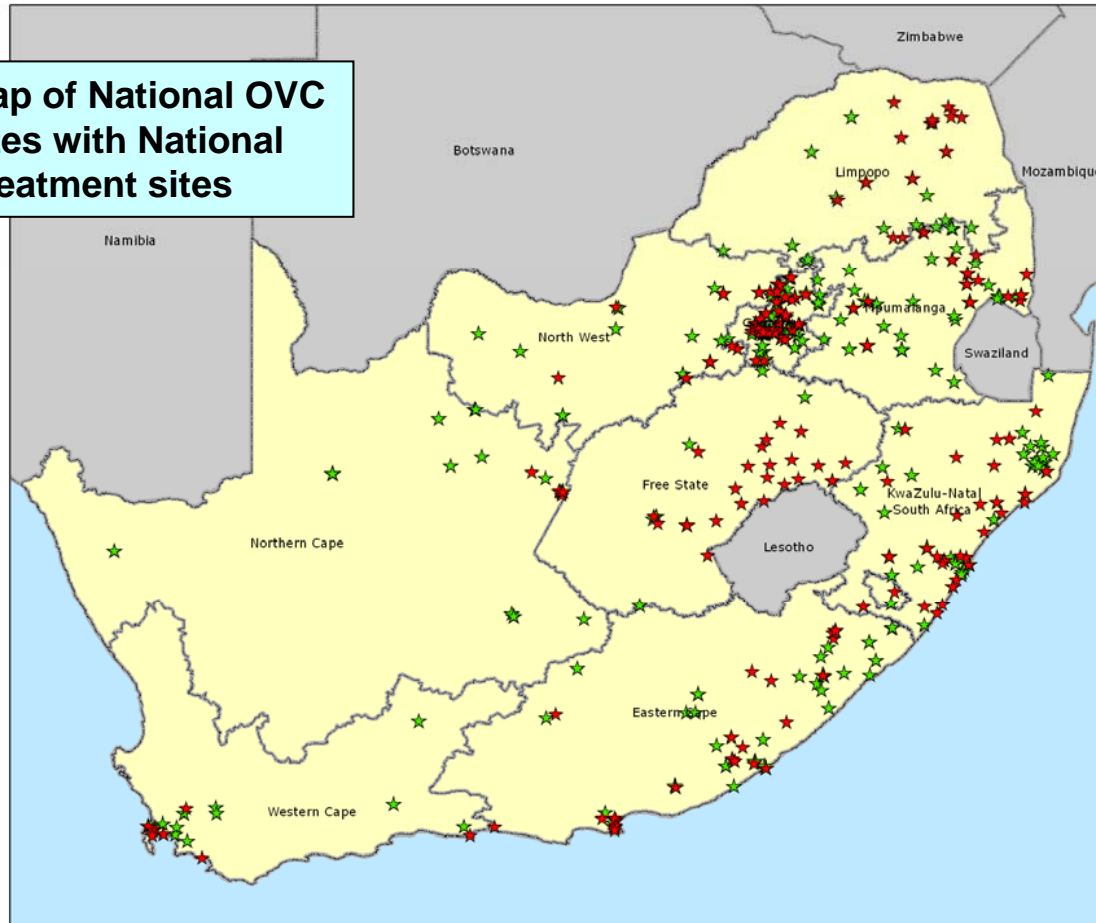
Using Site Data In a GIS



Using Site Data In a GIS

Emergency Plan - National OVC and Treatment Sites

Map of National OVC sites with National Treatment sites



Distribution of Emergency Plan Sites by province within South Africa

July 2006

Legend

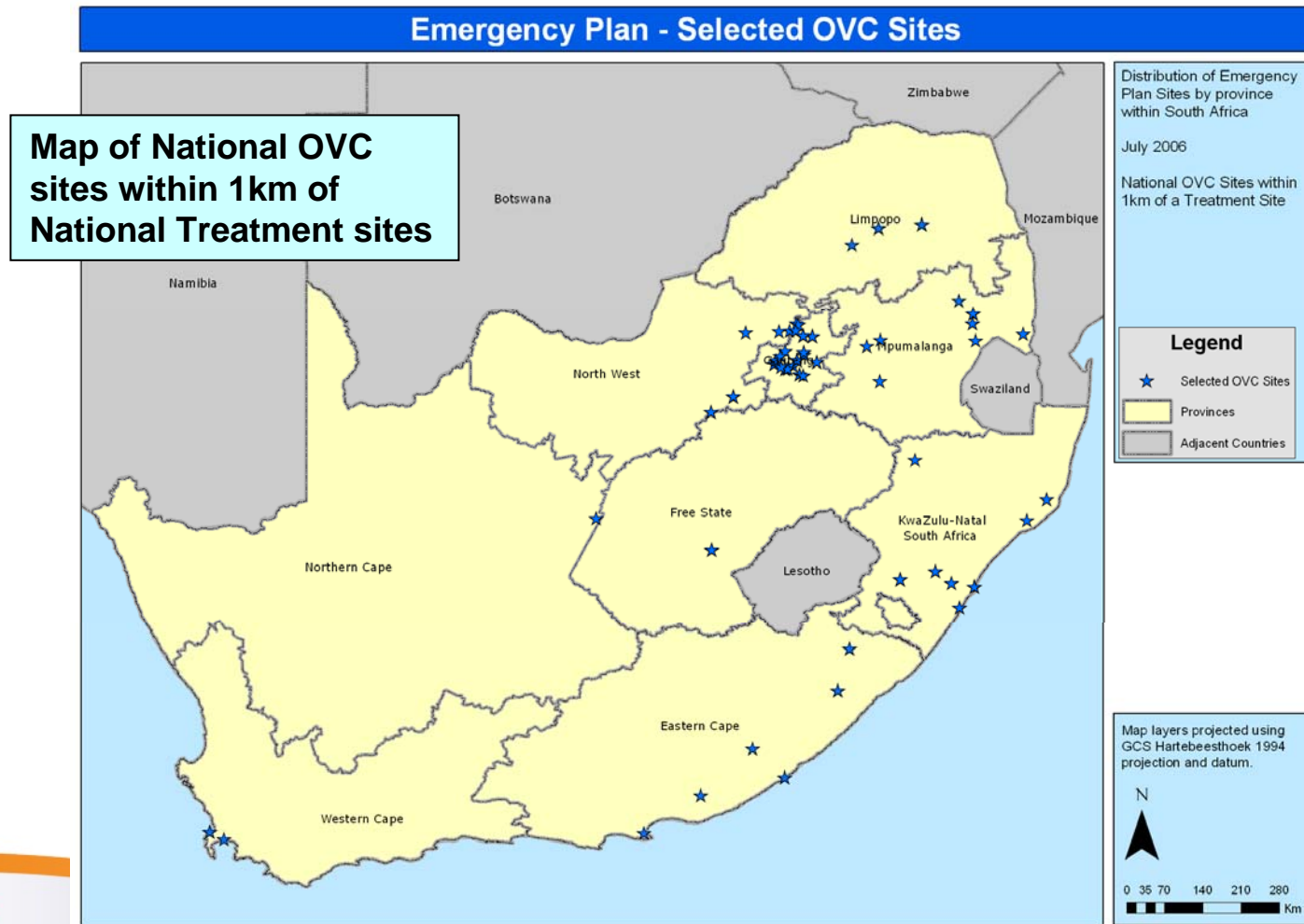
- ★ OVC Sites
- ★ Treatment Sites
- Provinces
- Adjacent Countries

Map layers projected using GCS Hartebeesthoek 1994 projection and datum.



0 35 70 140 210 280 Km

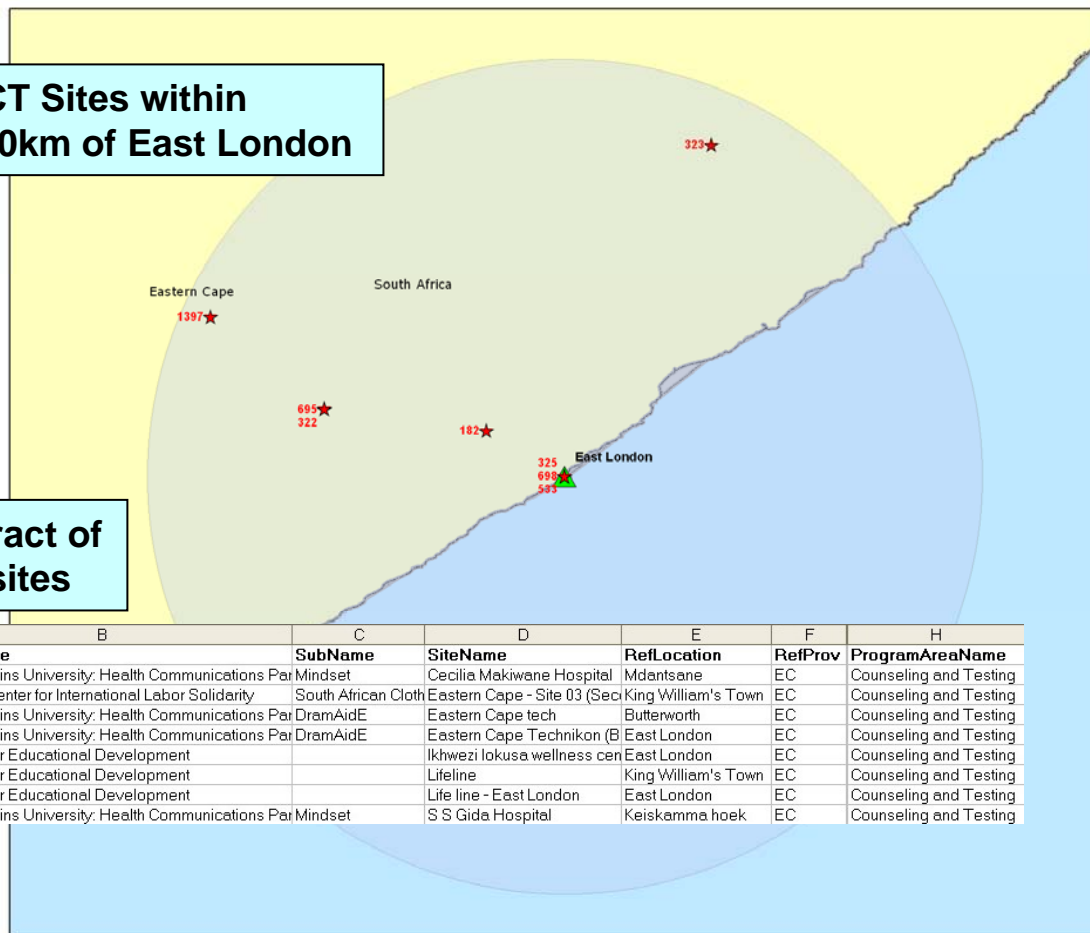
Using Site Data In a GIS



Using Site Data In a GIS

Emergency Plan Sites - East London VCT Partners

VCT Sites within
100km of East London



Distribution of Emergency
Plan Sites by province
within South Africa

June 2006

Legend

- ★ Sites
- ▲ East London
- Provinces
- Adjacent Countries
- 100km Buffer

Excel extract of
selected sites

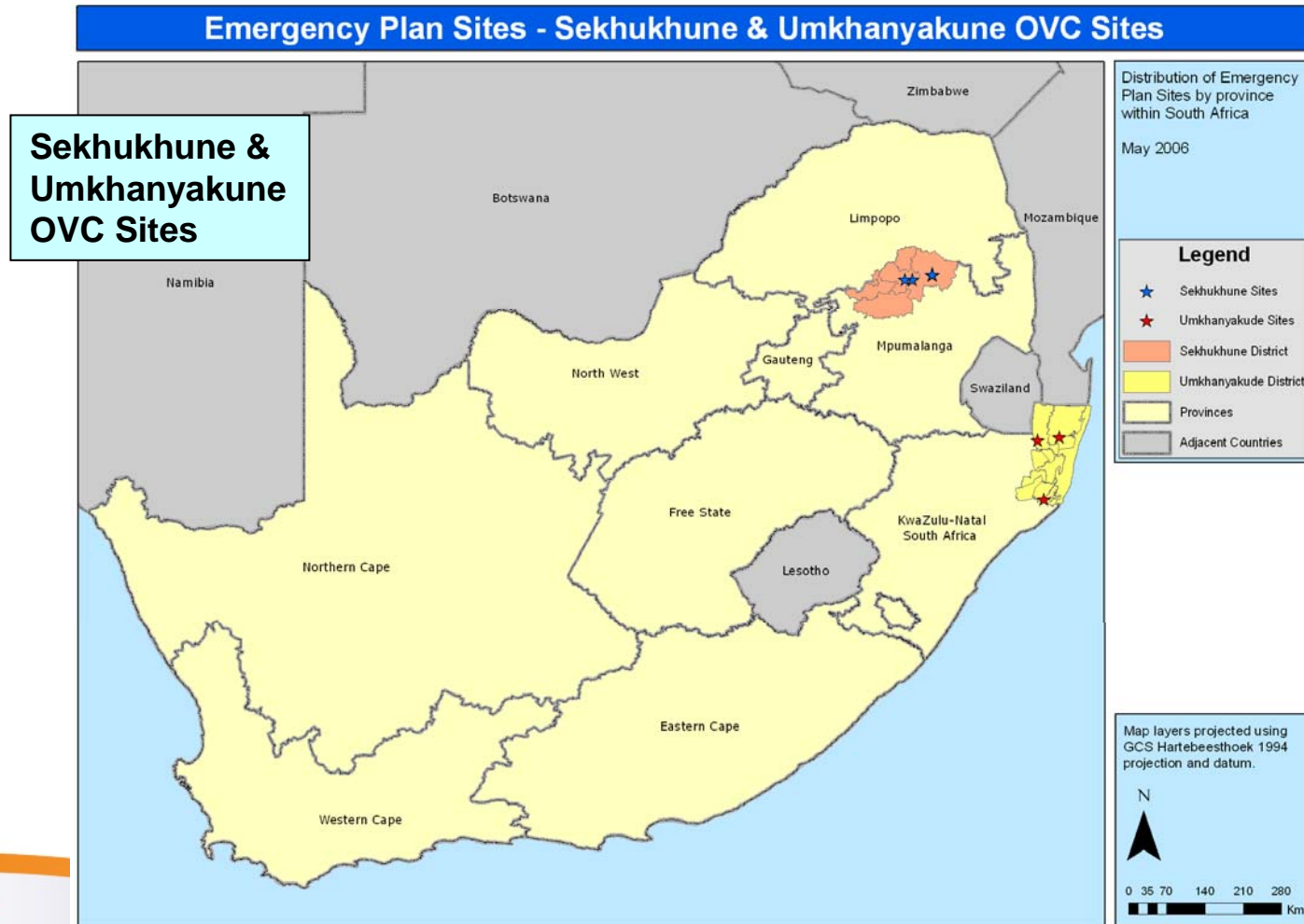
	A	B	C	D	E	F	H
1	SiteID	PrimeName	SubName	SiteName	RefLocation	RefProv	ProgramAreaName
2	182	Johns Hopkins University: Health Communications Par	Mindset	Cecilia Makiwane Hospital	Mdantsane	EC	Counseling and Testing
3	322	American Center for International Labor Solidarity	South African Cloth	Eastern Cape - Site 03 (Seci	King William's Town	EC	Counseling and Testing
4	323	Johns Hopkins University: Health Communications Par	DramAidE	Eastern Cape tech	Butterworth	EC	Counseling and Testing
5	325	Johns Hopkins University: Health Communications Par	DramAidE	Eastern Cape Technikon (B	East London	EC	Counseling and Testing
6	533	Academy for Educational Development		Ikhwezi lokusa wellness cen	East London	EC	Counseling and Testing
7	695	Academy for Educational Development		Lifeline	King William's Town	EC	Counseling and Testing
8	698	Academy for Educational Development		Life line - East London	East London	EC	Counseling and Testing
9	1397	Johns Hopkins University: Health Communications Par	Mindset	S S Gida Hospital	Keiskamma hoek	EC	Counseling and Testing

Map layers projected using
GCS Hartebeesthoek 1994
projection and datum.



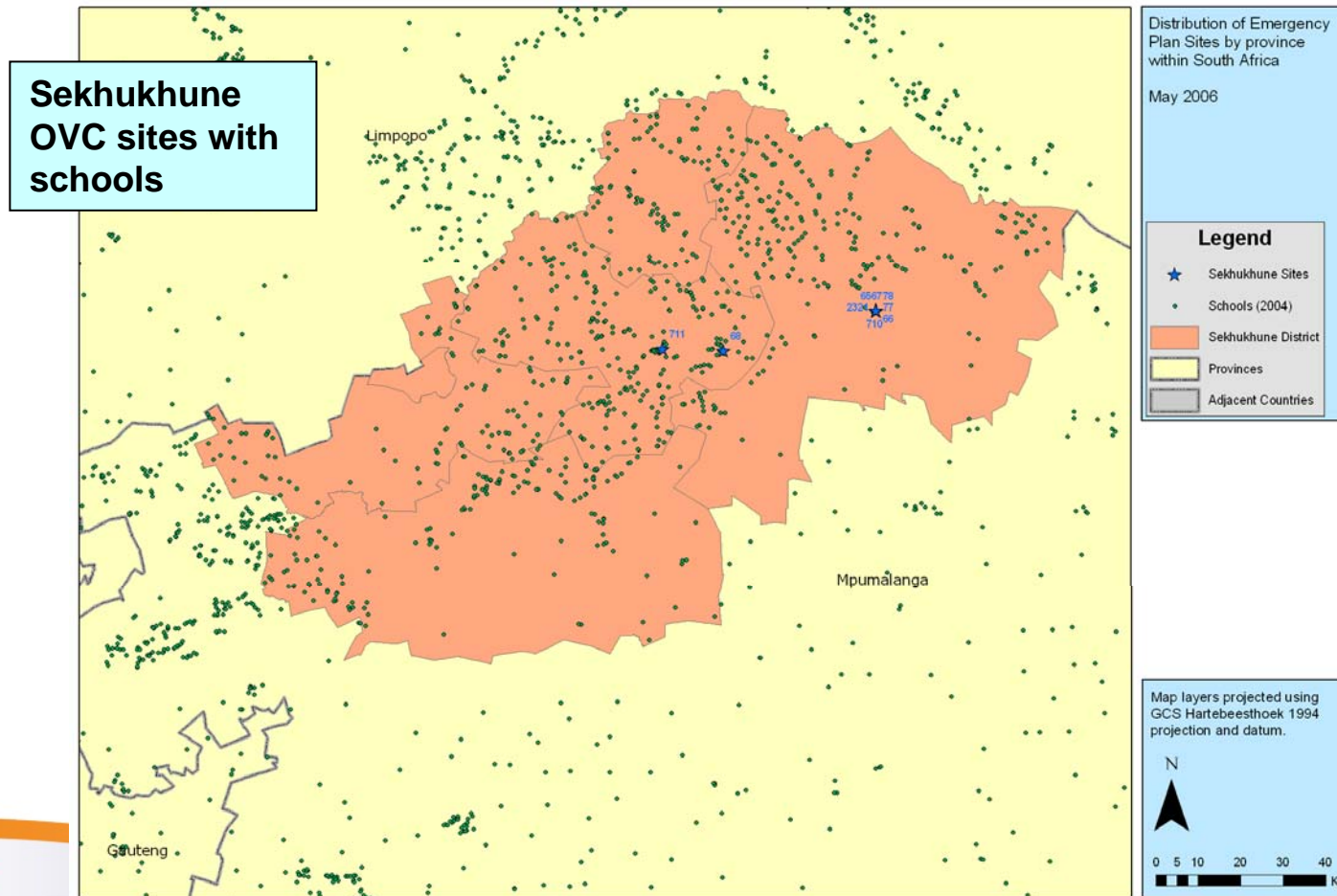
0 5 10 20 30 40
Km

Using Site Data In a GIS

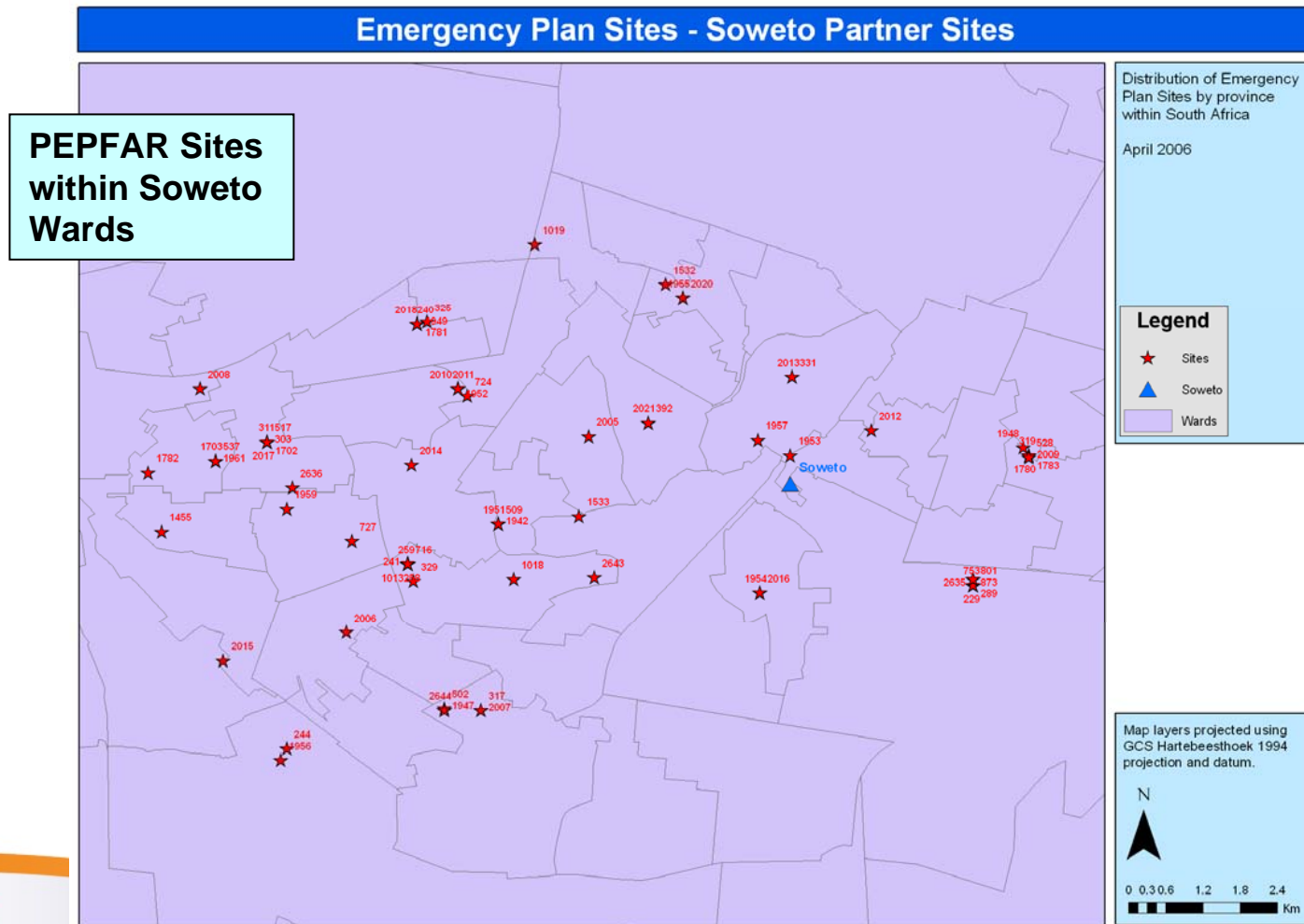


Using Site Data In a GIS

Emergency Plan Sites - Sekhukhune OVC Sites (with Schools)



Using Site Data In a GIS



Capturing Site Data On The DW

- Entry form is being developed into Data Warehouse to capture site data in formats discussed earlier
- Will allow for Partners to verify that their site location and information are correct
- This will improve the accuracy of current DW mapping functionality
- Ultimately, this will allow for an integrated online mapping facility.

Example of Current DW Site Form

Site Name →

Search facility for existing feature →

Fields for manual co-ordinate capture →

Enter site address data →

Site

Enter Shortname :
Esselen Street Clinic

Enter Name :
Esselen Street Clinic

Site at Healthfacility ☒

Facility Name :

Search >>

Select :
Site at Place ☐

Place Name :
Hillbrow

Search >>

Select :
GPS Coords ☐

X Dec: 28.04648

Y Dec: -26.18614

X Deg: ° ' " E

Y Deg: ° ' " S

Address :

Province: Gauteng

Program Areas:

Town :

Submit >>

Wrap-Up

- Question and Answers



Thank You